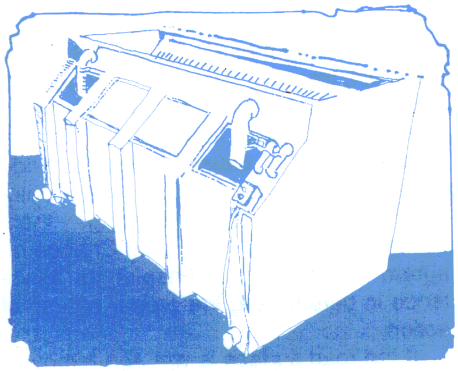


Commercial brine making equipment is available for approximately $4,500.

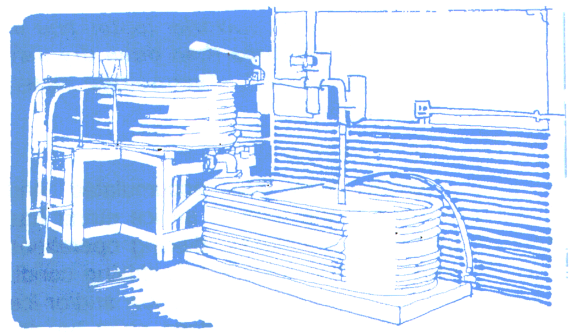
(and more controllable) pump driven sprayer system. Control should be available to vary spreading rates from 25 to 60 gallons per lane mile.

If large, horizontal tanks are used in the design, consider installing baffles inside the tanks to help prevent the liquid from suddenly shifting in the tank, creating a hazardous control situation for the operator.

Application

Accurate weather and road surface information are critical for the efficient use of anti-icing chemicals. Road surface temperatures, precipitation amounts and form, wind conditions, and road environment (sunlight exposure, surface condition, bridges, etc.) all affect the use and application of anti-icing measures.

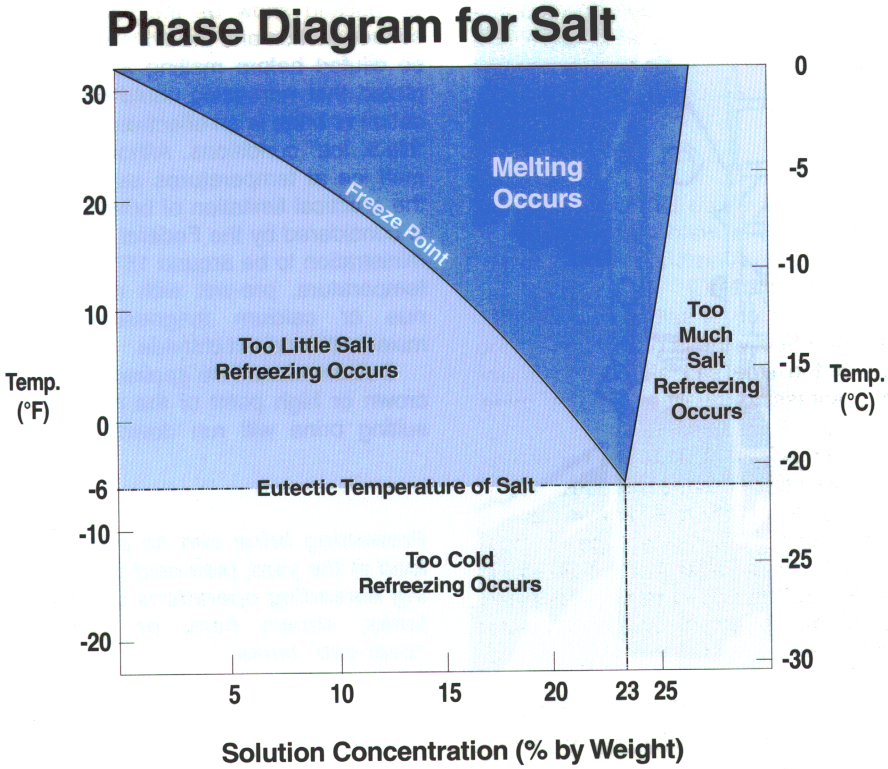
Understanding the freeze point depressing qualities of brine is important to its use and application as an anti-icing agent. (See the Phase diagram below). As you can see from the chart, the minimum freeze point of salt brine is -6°F at a concentration of 23.3%. Road surface temperatures are indicated on the side of the chart, solution concentrations along the bottom. The line represents the freeze point of the solution at a given temperature. The colored portion in the center of the chart shows the melting range of brine solutions. The area to the left shows the results of a solution with too little salt, the road surface will refreeze unless more salt brine or deicing salt is applied. The area to the right shows the results with too much salt, and once again the surface will freeze without the introduction of more moisture. As you can see, additional



Some Iowa agencies have made their own brine making equipmnt for approximately $1,000.

precipitation and heavy traffic can dilute the brine solution allowing the road to refreeze. ADDITIONAL PRECIPITATION ALWAYS RESULTS IN A DILUTION OF BRINE AT THE ROAD SURFACE.

Weather information is getting better with the introduction of doppler radar reports, often distributed over the Internet or to subscribers of weather service providers. RWIS costs continue to drop as the technology becomes more frequently deployed. Everything from air temperature, dew point, optical weather identifiers, to pavement temperature, surface status, and chemical information is available. Some agencies utilize remote television cameras to monitor traffic and bridge conditions. This information will help agencies accurately determine the appropriate application of anti-icers.



Summary

Anti-icing measures are an important weapon in the snowfighter's arsenal. The appropriate use of anti-icing techniques results in:

- Returning to bare pavement conditions more quickly, saving lives and reducing property damage due to fewer accidents, as well as the reduction of traffic delays and the resulting reduction of losses to local economies;
- Reduction in the quantity of deicer use, resulting in cost savings and less environmental concerns; and
- Reduction in the manpower necessary to maintain safe road conditions, resulting in less overtime costs, less operator fatigue and safer working conditions.